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ABSTRACT

As part of a multi-phase, multi-method study of the House Plan at Cypress College in California, this study investigated faculty association patterns, assuming that faculty greatly impact campus life, and the general campus milieu. In April 1976, a random sample of 100 full-time faculty, stratified along division lines, were sent survey instruments eliciting information on (1) number of friends, within and outside of respective college divisions and outside of the college, whom faculty members saw regularly, and (2) for a one week sample period, the amount of faculty/administration contact (both formal and informal), where faculty ate lunch, and the numbers of meetings attended and campus activities participated in. Seventy-one questionnaires were returned. Findings indicated faculty tended to have more friends within their own divisions than from other divisions. Whether this segregation was directly attributable to the House Plan was not determined. Business Education faculty in particular had more friends within their division and fewer outside which might indicate high internal cohesiveness. Faculty interacted with fewer administrators than with other faculty members. About 75% attended one to three meetings weekly, and 60% reported participating in no other campus activities, including extra-curricular activities of Houses to which they belonged. (TR)

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RESEARCH REPORT #4

PATTERNS OF FACULTY ASSOCIATION

Judy Davidson
Institutional Research Officer
Cypress College

July, 1976

JC 780 806

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RESEARCHER'S STATEMENT OF RESPONSIBILITY

I certify that the data contained herein are accurate and unbiased to the best of my knowledge and research abilities. I further certify that I have the sole responsibility for the content of this report and for any errors. I further certify that this research was carried out in full accordance with ethical standards concerning human subjects, and that in accordance with these standards, all questionnaires on which this report is based will have been destroyed by the time of the issuance of this report.

Judy Davidson
Institutional Research Officer

ACKNOWLEDGMENTS

I wish to express my grateful appreciation to all those faculty members of Cypress College who took the time and trouble to answer the questionnaire.

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Abstract

I. Introduction

This abstract is not to be taken as, nor should it be construed as, a summary or overview of all of the findings of the Report. It is only an abstract of some but not all parts of the Report. It should not be read without either a complete reading of the accompanying Report or at least extensive reference to it. The reader is further advised to keep in mind that any research report is an abstraction from reality, and that therefore any abstract is a further abstraction from reality.

II. Faculty patterns of association with other faculty

The Health Sciences Division was excluded from the sample because of low response.

It was found for the remaining respondants that faculty members in general tend to have more friends (or at least persons with whom they interact regularly) within their own Division than from other Divisions. That is, there does seem to be segregation or compartmentalization by Division, but whether this is due to the House Plan is not known at this time. When size of Division was controlled for, it was found that the faculty members in the Business Education Division reported having the largest number of friends within the Division and the lowest number of friends outside the Division, which may indicate a high degree of internal cohesiveness.

III. Faculty patterns of association with administrators

It was found that in general, faculty members tend to interact with fewer

administrators than with other faculty members. This is probabilistically expectable by virtue of the fact that there are far fewer administrators than there are faculty. It may also be sociologically expectable by virtue of the fact that faculty members probably have more in common with each other than they do with administrators.

IV. Faculty use of House snack bars.

It was found that 80% of the time, faculty members do not eat lunch in the House snack bars. For the remaining 20% of the time, when they do eat lunch in the House snack bars, they prefer their own House snack bars to those of other Houses by a ratio of about 3 to 1. The low rate of usage of the House snack bars does not necessarily indicate lack of gregariousness, since faculty members may be choosing other places (e.g., in their offices or off campus) to congregate.

V. Faculty attendance at meetings and participation in other activities.

It was found that about 3/4 of the sample attend between 1 and 3 meetings per week. In contrast, 60% of the sample reported attending or participating in no other campus activities, such as House extra-curricular activities. The Report indicates why this high rate of faculty non-participation in student activities may not necessarily be bad

The reader is again urged to read the complete Report and not to rely solely on the abstract.

THE CONCEPT OF THE HOUSE

Bigness in education has the advantages of efficiency and economy, but also its disadvantages -- the greatest of which is the tendency of the student to become indistinguishable and "lost." Breaking up the bigness into more educative, manageable and sociologically acceptable groups is the essence of the House Plan.

Architectural response:

A. Each House, serving from 400 to 1000 students, will be located at a pedestrian node.

B. Each House has its own conveniently located parking areas.

C. The House is a place where (1) student meets student; (2) professor meet professor, and even more important; (3) student meets professor in an informal, relaxed atmosphere.

D. Spaces within the House consist of student-faculty lounge, seminars, snack bar-kitchen, library, carrels, student officers' office, offices for faculty associates and counselors, terraces, etc.

E. The House permits more personalized student services.

1. Introduction

This report is part of a multi-phase, multi-method study of the House Plan. A previous report (Research Report #3) dealt with faculty attitudes towards the House Plan and other aspects of Cypress College. This report will deal with faculty patterns of association and participation in a few aspects of campus life. The basis for investigation of both faculty attitudes and patterns of association is the assumption that the faculty has a great impact on campus life and the general campus milieu. This report would best be read in conjunction with Research Report #3 "Faculty Attitudes."

Late in April, 1976, a strafified random sample of the full-time teaching faculty was drawn using a table of random numbers, with a projected sample size of N=100. Stratification was again done along Division lines, as it was for Research Report #3; however, it should be noted that the sample for this Report was drawn completely independently from the drawing of the sample for Report #3, and therefore the individulas who appeared in the sample for Report #3 are not necessarily the same as the persons in this sample.[1]

Because the response from the Health Sciences Division was only approximately 50% of that stratum, their questionnaires were excluded from the general sample; therefore, anything said in this Report should be understood to specifically not include Health Sciences. The response rate from the rest of the faculty, once

[1] The probability of a given individual's appearing in both samples is of course (1/2) (1/2) = 1/4.

Health Sciences was excluded, was 85%, with sample N=71. Since the 15% of non-responses were distributed evenly throughout the strata and were not concentrated in any one Division,[2] then it is probably safe to assume that these 71 responses are more or less representative of the entire faculty (with the exception of the Health Sciences Division), although our confidence in its representativeness is of course not as great as it was for Report #3. Further consultation with a mathematician demonstrated that the probability is adequately high that this sample does constitute a random sampling of the faculty and can therefore be taken as representative of the faculty (with the exception of the Health Sciences faculty).

A copy of the questionnaire is attached. (See figure 1.) Note that like that other research instruments I have designed, it is very short, and with the exception of the question about lunch, the respondants were required to fill in answers rather than to choose them from a number of mulitple-choice categories. The purpose of this kind of response-category design is to prevent loss of data. Given fill-in response categories, the researcher can always group the data once she has it; however, given multiple-choice grouped response categories to begin with, then the raw data are irretrievably lost.

Figure 1.

I have _____ number of friends among the faculty within my own Division that I see regularly. (Note: "regularly" is to be defined in terms of what it means to you.)

I have _____ number of friends among the faculty outside my Division that I see regularly.

I have _____ number of friends including relatives outside of Cypress that I see regularly.

Last week I saw or talked to _____ number of members of the administration on either a formal or informal basis.

Last week I ate lunch at: (Check one for each day)

Monday:
__Muir-Twain
__Bernstein
__Einstein
__Edison
__Carnegie
__In my office
__Off-campus
__Didn't eet lunch

Tuesday:
__Muir-Twain
__Bernstein
__Einstein
__Edison
__Carnegie
__In my office
__Off-campus
__Didn't eat lunch

Wednesday:
__Muir-Twain
__Bernstein
__Einstein
__Edison
__Carnegie
__In my office
__Off-campus
__Didn't eat lunch

Thursday:
__Muir-Twain
__Bernstein
__Einstein
__Edison
__Carnegie
__In my office
__Off-campus
__Didn't eat lunch

Friday:
__Muir-Twain
__Bernstein
__Einstein
__Edison
__Carnegie
__In my office
__Off-campus
__Didn't eat lunch

Last week I attended _____ number of meetings.

Last week I participated in _____ number of other campus activities, such as House extra-curricular activities.

2. Statistical Summary of results

1. Reported number of friends within the respondant's Division.

Number of friends	Frequency*	Percentage
0-1	10	14.08%
2-3	18	25.36%
4-5	15	21.13%
6-7	10	14.08%
8-9	4	5.63%
10-11	5	7.04%
12-13	0	0.00%
14-15	3	4.23%
16-17	0	0.00%
18-19	1	1.41%
20+	4	5.63%
Other (misread question)	1	1.41%
	71	100.00%

Arithmetic mean (computed from raw, ungrouped data):

$\bar{X}=6.11$

Standard deviation (computed from raw, ungrouped data):

$s=5.83$

2. Reported number of friends on faculty but outside respondant's Division.

Number of friends	Frequency	Percentage
0-1	28	39.42%
2-3	16	22.54%
4-5	15	21.13%
6-7	2	2.82%
8-9	0	0.00%
10-11	4	5.63%
12-13	2	2.82%
14-15	2	2.82%
Other ("I don't know")	2	2.82%
	71	100.00%

*This refers to the frequency of responses in the category (not to the frequency with which these friends are seen)

Arithmetic mean (computed from raw, ungrouped data):

$\bar{X}=3.20$

Standard deviation (computed from raw, ungrouped data):

$s=5.83$

3. Reported number of administrators with whom respondant interacted over a one-week period.

Number	Frequency	Percentage
0	15	21.13%
1	18	25.34%
2	16	22.53%
3	9	12.69%
4	7	9.86%
5	3	4.23%
6	2	2.82%
7	0	0.00%
8	1	1.41%
	71	100.00%

Arithmetic mean: $\bar{X}=1.97$ Standard deviation: $s=1.77$

4. Faculty members' reports of where they ate lunch over a one-week period.

N=71x5=355

Location	Frequency	Percentage of 355
Bernstein House	10	2.82%
Muir-Twain House	21	5.92%
Einstein House	17	4.79%
Edison House	7	1.97%
Carnegie House	16	4.51%
In respondant's office or lab	92	25.92%
Off-campus	117	32.95%
Didn't eat lunch	75	21.13%
	355	100.00%

Location	Frequency	Percentage of 355
Own House	53	14.93%
Other House	18	5.07%
In respondant's office or lab	92	25.92%
Off-campus	117	32.95%
Didn't eat lunch	75	21.13%
	355	100.00%

5. Reported number of meetings attended over a one-week period.

Number of meetings	Frequency	Percentages
0	14	19.72%
1	18	25.35%
2	20	28.16%
3	14	19.72%
4	3	4.23%
5	1	1.41%
No answer	1	1.41%
	71	100.00%

Arithmetic mean:

$\overline{X}=1.67$

Standard deviation:

$s=1.21$

6. Reported number of other campus activities participated in over a one-week period.

Number of activities	Frequency	Percentages
0	42	59.14%
1	14	19.72%
2	9	12.68%
3	2	2.82%
4	3	4.23%
5	1	1.41%
	71	100.00%

Arithmetic mean:

$\overline{X}=.775$

Standard deviation:

$s=1.207$

3. Intradivision patterns of faculty association

The respondants of the sample were first asked the following question:

I have ____number of friends among the faculty within my own Division that I see regularly. (Note: "Regularly" is to be defined in terms of what it means to you.)

Note that rather than imposing a definition of what "regularly" means, the instructions direct the respondant to use his or her own definition. This is to avoid the imposition of a researcher's definition, which of course may be entirely wrong. The non-use of some sort of "objective" criterion, such as "N times a week", also controls for individual variations in gregariousness.

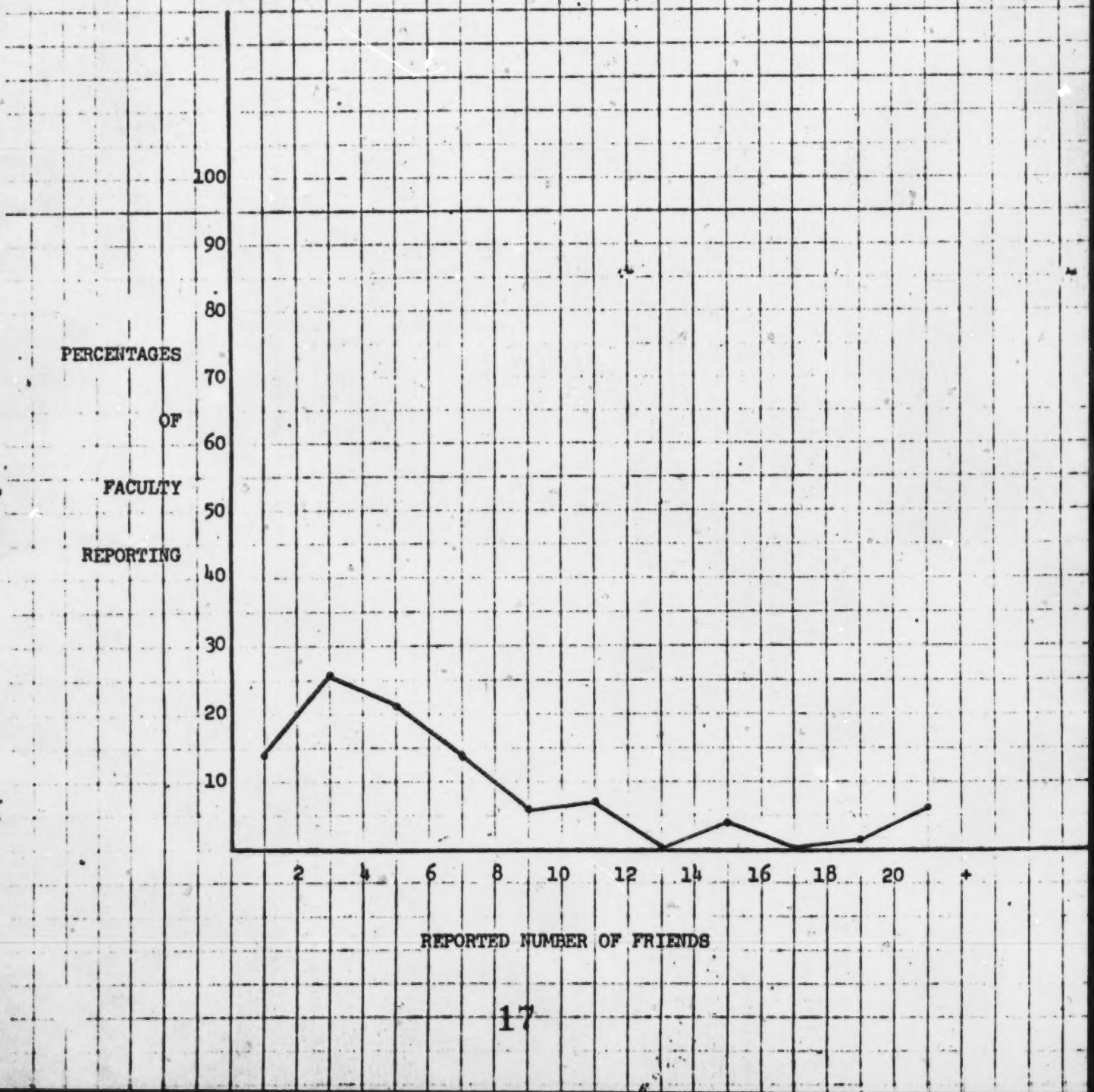
The distribution for the entire sample is given on page 4 in the statistical summary, and is graphed on page 8, Figure 2. Note that the mode is in the 2-3 category, but the mean of 6.11 is substantially higher because of a few extreme scores.[3] Note further that about 3/4 of the sample fall into the categories from 0 to 7; i.e., a safe generalization would be that most of the faculty have between 0 and 7 persons within their own Division with whom they associate regularly.

The extent to which sample findings can be generalized to hold true for the population will now be examined. Note first of all that the sample size is not quite large enough to make use of the Law of Large Numbers, since sampling was done without replacement. That is, in general, the sample size should be at least around N=100 in order to make use of the Law of Large Numbers; however, when the sample size is smaller than 100 but is still a large fraction of the

[3] Remember that the arithmetic mean is very sensitive to a few extreme scores and will be "pulled" in the direction of these extreme scores.

Figure 2.

Reported number of friends within Division



population size, normality of the sampling distribution of the means can be assumed but only if sampling is done with replacement. In the case of polling faculty members, however, sampling with replacement is obviously not practicable. Conservatively speaking, then, the sample size in this case is really too small to make use of the assumptions of the Law of Large Numbers. There are sampling distributions for small sample sizes, such as "Student's" distribution and the chi-square distribution, but these require the assumption that the underlying population distribution is itself normal, an assumption which it would be unwise to make in view of the evidence so far which indicates that the population distribution is probably sharply negatively skewed (i.e., skewed in the direction of lower numbers of friends). If, however, we regroup the response categories into just two categories, then we can make use of the binomial distribution, which, as was pointed out in Research Report #3 pp. 10 & 16, rapidly approaches normality as sample size increases.[4] While use of the binomial distribution does involve some loss of fineness of analysis of data, by virtue of the collapsing of the 11 response categories down to two response categories, in this case it is preferable to making the probably untrue assumption of normality of the underlying population distribution. The original distribution of reported number of friends within the respondant's Division for the total sample is given in the statistical summary on page 4. On the basis of the distribution of the data, we shall regroup the data into the following two categories:

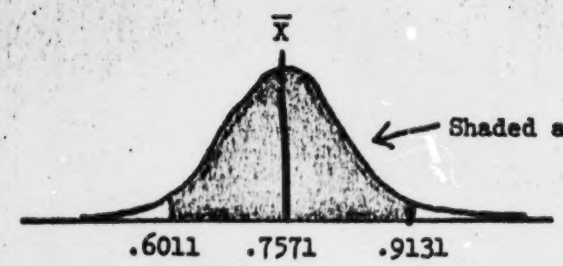
Number of friends	Frequency	Percentages
0-7	53	75.71%
8-20+	17	24.29%
	70	100.00%

[4] In fact, binomially distributed variables approach normality with sample size as small as N=30.

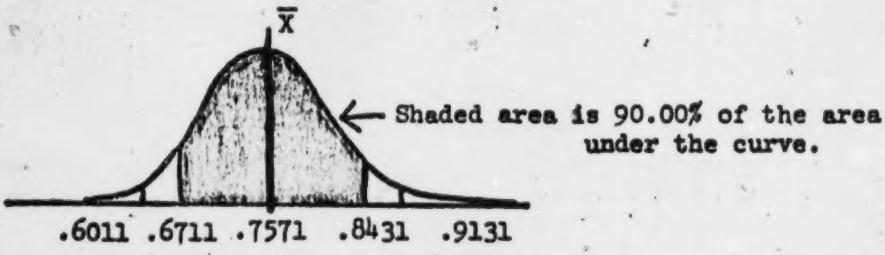
We therefore, are dealing with a variable $X=p_f$=proportion of responses reporting 0-7 friends within the respondant's Division, and of course, 1-X=proportion of responses reporting 8-20+ friends withing the respondant's Division. The underlying theoretical probability distribution has the following individual terms:

Number of responses reporting 0-7 friends	Probability of obtaining this number of responses
0	$\binom{N}{0}(3/4)^0(1/4)^N$
1	$\binom{N}{1}(3/4)^1(1/4)^{N-1}$
.	.
.	.
.	.
.	.
.	.
.	.
.	.
.	.
N-1	$\binom{N}{N-1}(3/4)^{N-1}(1/4)^1$
N	$\binom{N}{N}(3/4)^N(1/4)^0$

Again, as in Research Report #3, pp.(11-12), this distribution closely approximates a normal distribution as N gets larger, with mean μ =p=proportion of responses reporting 0-7 friends, and standard error of $\sqrt{\frac{p(1-p)}{N}}$. So in this particular sampling distribution with which we are dealing, the mean of the sampling distribution is estimated by p_f=.7571, and the standard error is $\sqrt{\frac{(.7571)(.2429)}{70}}$ = .051. Given these parameters, we can now place confidence limits on our use of the sample mean as an estimator of the population mean. Because the sampling distribution closely approximates a normal distribution, then 99.73% of the area under the probability curve will be within $\pm$ 3 standard deviations of the mean:



That is, about 99% of the time, the actual population mean will fall into the shaded area, and that given repeated sampling from the same population using samples of size N=71, over the long run we would expect that the proportion of faculty responding that they have between 0 and 7 friends within their Division would be between about 60% and 91% about 99% of the time. If we lower the confidence level to 90%, the limits become .6711 and .8431.



Again this means that with repeated sampling from the same population using samples of N=71, over the long run we could expect that the proportion of faculty responding that they have between 0 and 7 friends within their Division would be between about 67% and 84% about 90% of the time. Conversely of course, we would expect that the proportion of faculty answering that they have between 8 and 20 or more friends within their Division would be between about 8% and about 40% with a probability of 99.73%, or between about 15% and 33% with a probability of 90%.

It might be informative to find out in which Division the faculty are the most gregarious; i.e., in which Division did the persons in the sample indicate the highest number of intradivision friends? The distribution by Division follows:

Fine Arts

Number of friends	Frequency of responses
0-1	1
2-3	0
4-5	3
6-7	1
8-9	1

Business Education

Number of friends	Frequency of responses
0-1	1
2-3	3
4-5	3
6-7	1
8-9	0
10-11	0
12-13	0
14-15	2

Language Arts

Number of friends	Frequency of responses
0-1	3
2-3	3
4-5	4
6-7	2
8-9	1

Physical Education

Number of friends	Frequency of responses
0-1	2
2-3	2
4-5	1
6-7	0
8-9	0
10-11	1

Social Sciences

Number of friends	Frequency of responses
0-1	2
2-3	5
4-5	2
6-7	1
8-9	1
10-11	1
12-13	0
14-15	1

Science, Math, & Engineering

Number of friends	Frequency of responses
0-1	1
2-3	3
4-5	1
6-7	2
8-9	1
10-11	2
20+	2

Vocational/Technical Education

Number of friends	Frequency of responses
0-1	0
2-3	2
4-5	1
6-7	1
8-9	0
10-11	1

These are the raw data; however, since the number of intradivision friends one has may depend on how large the Division is, these numbers should be weighted such that the figures would reflect the relative frequencies of friends under the assumption that all Divisions were of equal size. The figures below are such weighted frequencies. Note that these are no longer "number of friends;" i.e., one would not want to say from these figures that on the average faculty members in Fine Arts have .059 number of friends. Rather the figures below are only weighted frequencies for comparative purposes:

Fine Arts

Number of friends	Weighted frequency
0-1	.059
2-3	.000
4-5	.176
6-7	.059
8-9	.059

Weighted arithmetic mean: $\overline{X}_w = .059$

Fine Arts

Number of friends	Weighted frequency
0-1	.059
2-3	.000
4-5	.176
6-7	.059
8-9	.059

Weighted arithmetic mean:

$\bar{X}_w$=.-059

Business Education

Number of friends	Weighted frequency
0-1	.050
2-3	.150
4-5	.150
6-7	.050
8-9	.000
10-11	.000
12-13	.000
14-15	.100

Weighted arithmetic mean:

$\bar{X}_w$=.067

Language Arts

Number of friends	Weighted frequency
0-1	.100
2-3	.100
4-5	1133
6-7	.133
8-9	.033

Weighted arithmetic mean:

$\bar{X}_w$=.038

Physical Education

Number of friends	Weighted frequency
0-1	.125
2-3	.125
4-5	.063
6-7	.000
8-9	.000
10-11	.063

Weighted arithmetic mean:

$\bar{X}_w = .063$

Social Sciences

Number of friends	Weighted frequency
0-1	.045
2-3	.114
4-5	.045
6-7	.023
8-9	.023
10-11	.023
12-13	.000
14-15	.023
16-17	.000
18-19	.023
20+	.045

Weighted arithmetic mean:

$\bar{X}_w = .023$

Science, Engineering, & Math

Number of friends	Weighted frequency
0-1	.032
2-3	.097
4-5	.032
6-7	.065
8-9	.032
10-11	.065

Weighted arithmetic mean:

$\bar{X}_w = .036$

Vocational/Technical Education

Number of friends	Weighted frequency
0-1	.000
2-3	.118
4-5	.059
6-7	.059
8-9	.000
10-11	.059

Weighted arithmetic mean:

$$\overline{X}_w = .059$$

Note that under the assumption of equal size of Divisions that the Business Division sample has the highest weighted arithmetic mean and the Social Sciences sample the lowest.

4. Interdivision patterns of faculty association

The respondants of the sample were asked to answer the following question:

I have _____ number of friends among the faculty outside my Division that I see regularly.

The distribution for the entire sample is given on page 4 in the statistical summary, and is graphed on page 19, Figure 3. Note from the graph that the distribution is modal in the category 0-1 friends, whereas the distribution of friends within the respondants' Division is modal in the category 2-3 friends. (Figure 2, page 8). Note further that if the responses to number of friends outside the Division are dichotomized, the distribution is as follows:

Number of friends outside Division	Frequency	Percentage
0-7	61	88.41%
8-20+	8	11.49%
	69	100.00%

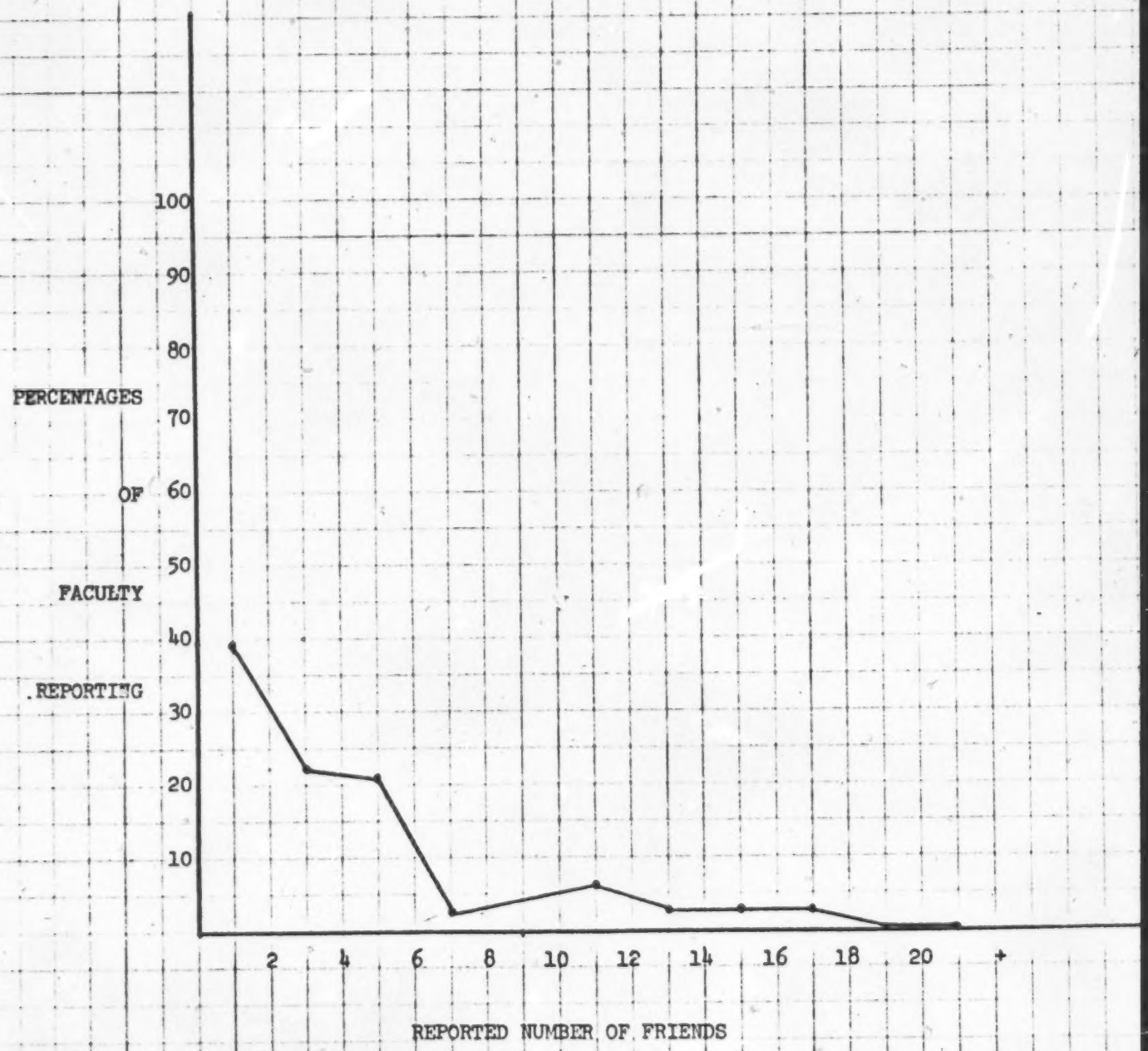
Compare this to the distribution of number of friends within the respondant's Division:

Number of friends within Division	Frequency	Percentages
0-7	53	75.71%
8-20+	17	24.29%
	70	100.00%

Note the higher concentration of responses in the 0-7 category for the distribution of friends outside the Division compared to the second distribution. That is, it would appear that the sample respondants reported that they have fewer friends outside their Division than within their Division, and we can tes

Figure 3.

Reported number of friends outside Division



for whether or not this difference is significant by using the sampling distribution of the difference between the following proportions:

Proportion of those reporting 0-7 friends within Division $= p_A = .757.$

Proportion of those reporting 0-7 friends outside Division $= p_B = .8841$

The sampling distribution of the difference between these proportion approaches normality as sample size gets larger, with mean $\mu_A - \mu_B = 0$, and a standard error of $\sigma_{A-B} = \sqrt{q(q-1)(\frac{1}{N_A} + \frac{1}{N_B})}$, where $q = \frac{N_A p_A + N_B p_B}{N_A + N_B}$. When the standard score (i.e., the test statistic for the observed differences between the proportions) is computed according to the formula $z = \frac{p_A - p_B}{C-D}$ it is found that there is a significant difference between the two proportions at the .02 level, i.e., one can say that faculty associate with significantly fewer persons outside their Division than within their Division. Research Report #3 found that faculty felt that the leading disadvantage of the House Plan was segregation from faculty in other Divisions. Their perceptions of this segregation are now shown to be correct, i.e., such segregation does in fact exist, but whether or not is can be causally imputed to the House Plan is a different question, since it may be that in any college or university faculty members largely associate with those within their own disciplines. This question (i.e., whether or not the House Plan is the cause) should be examined through a control suudy of a non-cluster college.

We shall now examine the reported number of friends outside the respondant's Division broken down by Division. Below are the distribution frequencies. Unlike the frequency distributions for number of friends within the respondant's Division, the frequencies below probably do not need to be weighted, since the number of

friends one has outside one's Division probably does not have anything to do with the size of one's own Division.

Fine Arts

Number of friends	Frequency of response
0-1	2
2-3	3
4-5	1

Arithmetic mean:

$\overline{X}=2.167$

Business Education

Number of friends	Frequency of responses
0-1	6
2-3	2
4-5	1

Arithmetic mean:

$\overline{X}=1.111$

Language Arts

Number of friends	Frequency of responses
0-1	1
2-3	3
4-5	5
6-7	0
8-9	0
10-11	0
12-13	2

Arithmetic mean:

$\overline{X}=4.231$

Physical Education

Number of friends	Frequency of responses
0-1	3
2-3	2
4-5	1

Arithmetic mean:

$\overline{X}=1.667$

Social Sciences

Number of friends	Frequency of responses
0-1	9
2-3	1
4-5	4
6-7	0
8-9	0
10-11	3
12-13	0
14-15	1

Arithmetic mean:

$\overline{X}=4.000$

Science, Math, and Engineering

Number of friends	Frequency of responses
0-1	4
2-3	2
4-5	2
6-7	1
8-9	0
10-11	1
12-13	0
14-15	1

Arithmetic mean:

$\overline{X}=4.182$

Vocational/Technical Education

Number of friends	Frequency of responses
0-1	0
2-3	3
4-5	1
6-7	1

Arithmetic mean:

$\bar{X}=3.800$

Note that Language Arts has the highest mean, Business Education has the lowest. The fact that the respondants from the Business Education Division had the highest weighted mean for reported number of friends within the Division and the lowest mean for reported number of friends outside the Division may indicate a high degree of internal cohesiveness within the Business Education Division.

Respondants in the sample were also asked to indicate how many other friends they have besides those on the faculty through the following question:

> I have ____ number of friends including relatives outside of Cypress that I see regularly.

The purpose of this question was to control for the possibility of bias in the previous two answers occuring through the appearance in the sample of large numbers of persons who have no associations either on campus or off campus. That is, the question was placed in the questionnaire to discover if any "hermits" turned up in the sample who would influence the distributions and give a biased picture of on-campus faculty associations. Since no such turned up in the sample, then we can assume that the respondants of the sample are normally gregarious, and that a high or low number of on-campus friends is not due solely to personality characteristics.

5. Faculty-administration contacts

Respondants in the sample were asked to indicate their amount of contact with the administration through the following question:

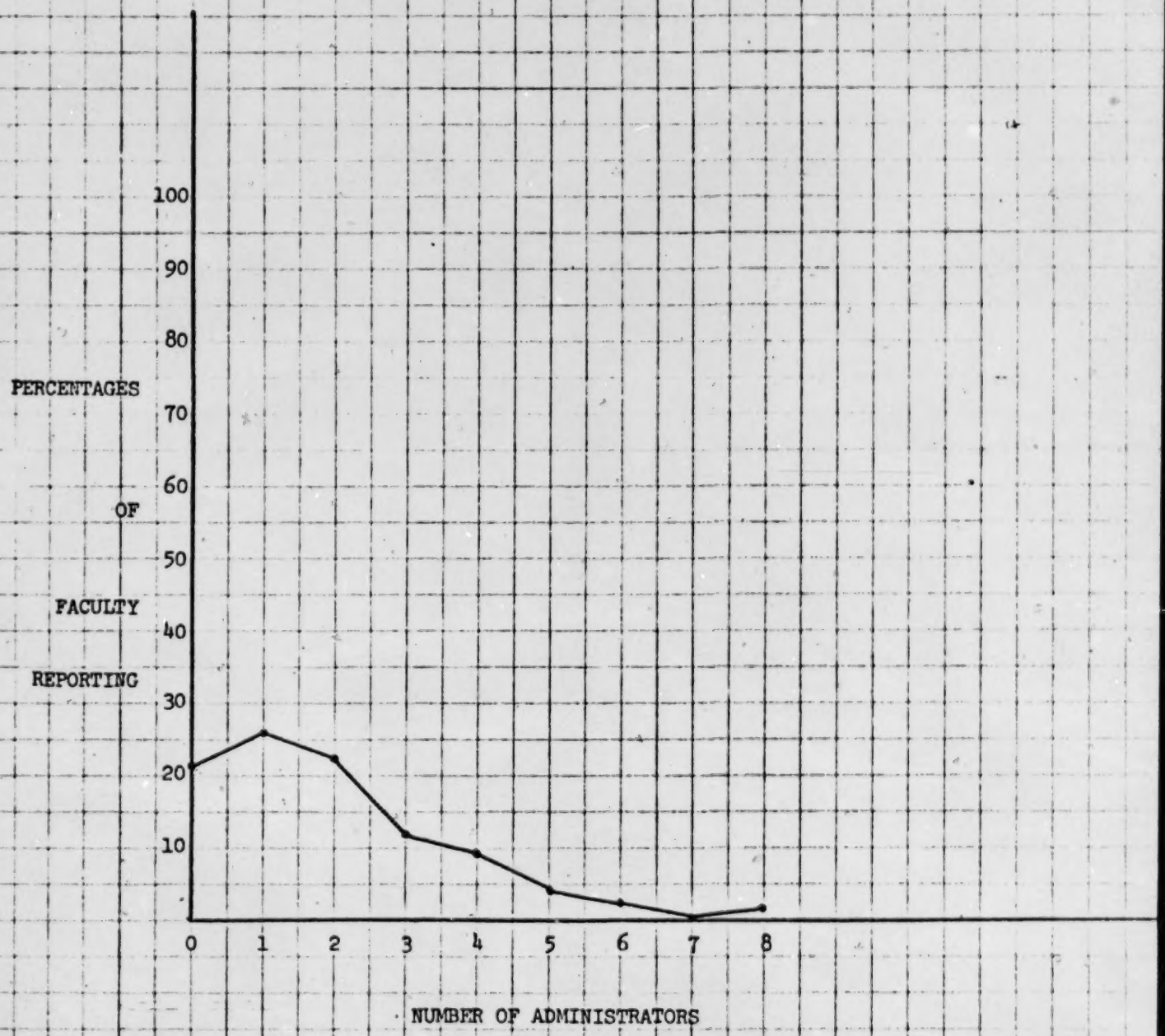
> Last week I saw or talked to ___ number of members of the administration on either a formal or informal basis.

Note that exactly which persons "members of the administration" includes is left unspecified, and was done so purposefully for the following reason: currently the status of Division Chairpersons is somewhat ambiguous on campus, with some persons perceiving them as faculty and others perceiving them as administration. Rather than the researcher's arbitrarily defining who are administrators and who are not, this was left up to the respondant. Note that if the question had been phrased to "clarify" the definition of "administrator," with something such as "Administration shall be defined to include Division Chairpersons" or "Administration shall be defined to exclude Division Chairpersons," then the information received from this would be less accurate from the point of view of faculty perceptions of who administrators are. With the question left purposefully vague, we can be sure that the faculty respondant is answering it according to his or her own perceptions of whom the set of administrators exists (although we don't know whether or not is includes Division Chairpersons, which is largely irrelevant for this particular phase of the study).

The distribution of responses for this question is given in the statistical summary on page 5, and are graphed on page 24, Figure 4. Note that the distribution is modal at 1, and the mean is 1.97. Furthermore, while in general the number of faculty contacts with administrators is far lower than the number of faculty-faculty

Figure 4.

Number of Administrators interacted with



contacts, this is to be expected to a degree by virtue of the fact that there are far fewer administrators than faculty. Furthermore, the low rate of faculty-administration contact has both potentially positive and negative aspects for the faculty; on the one hand, access to administrators is one of the forms of access to power, particularly with respect to power over distribution of scarce resources and decision-making power (as it will be pointed out in either Research Report #5 or #6); on the other hand, the low rate of faculty-administraiton contact ensures that the faculty member is autonomous within the classroom, and some faculty members have specifically remarked on the low rate of faculty-administration contact as an advantage.

It may be informative to look at faculty-administration contact by Division. The following are the distributions for each Division:

Fine Arts

Number of administrators interacted with	Frequency
0	1
1	2
2	1
3	1
4	1

Arithmetic mean:

$\bar{X}$=1.833

Business Education

Number of administrators interacted with	Frequency
0	2
1	2
2	4
3	2

Arithmetic mean:

$\bar{X}$-1.600

Language Arts

Number of administrators interacted with	Frequency
0	3
1	5
2	3
3	2
4	1
5	1

Arithmetic mean:

$\bar{X}=1.733$

Physical Education

Number of administrators interacted with	Frequency
0	1
1	0
2	2
3	0
4	3

Arithmetic mean:

$\bar{X}=2.667$

Social Sciences

Number of administrators interacted with	Frequency
0	6
1	5
2	2
3	2
4	1
5	1

Arithmetic mean:

$\bar{X}=1.411$

Science, Engineering, and Math

Number of administrators interacted with	Frequency
0	2
1	3
2	2
3	1
4	1
5	1
6	1
7	0
8	1

Arithmetic mean:

$\bar{X}=3.300$

Vocational/Technical Education

Number of administrators interacted with	Frequency
0	0
1	1
2	2
3	1
4	0
5	0
6	1

Arithmetic mean:

$\bar{X}=2.800$

Note that Social Sciences has the lowest mean number of interactions with administrators, while Science, Engineering, and Math has the highest. One must remember, however, that a high or low rate of faculty interaction may or may not be good from the point of view of the faculty member. Whether or not such interaction is viewed positively or negatively probably depends on the faculty member and has a positive or negative attitude toward the administration (see Research Report #3 for faculty attitudes).

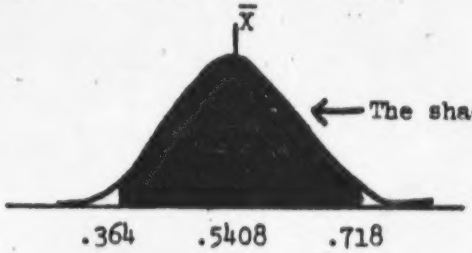
6. Faculty members' reports of where they ate lunch over a one-week period

The sample respondants were asked to indicate where they ate lunch over a one-week (i.e., five-day) period. The distribution is reported in the statistical summary on page 5 in two ways: (1) by location, irrespective of the respondant's Division. Note that N=355; i.e., 5 days for each of 71 respondants in the sample. (2) by location with respect to the House with which the respondant's Division is affiliated. Again, N=355. These distributions are graphed in Figures 5 and 6 on pages 30-31. Note that 80% of the time, the respondants in the sample ate somewhere other than House snack bars, and that about half the time, the respondants either ate off campus or did not eat lunch. When the respondants of the sample did use House snack bars, they preferred their own House snack bars about 3 to 1 over other snack bars.

I want to parenthetically note that this question may not be a particularly good measure of faculty-faculty association, since it may very well be that a low rate of usage of the House snack bars does not mean low sociability; for example, it may very well be that members of the faculty eat lunch together in each other's offices or somewhere off campus. The main import of this question, therefore, should be as in indicator of their usage of House facilities.

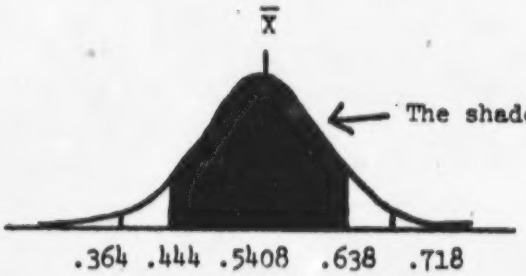
With respect to the 54.08% of the time which the respondants reported that they either did not eat lunch or that they ate off campus, we can obtain confidence limits for our use of 54.08% as an estimate of the population mean. Since we are

again dealing with a binomial sampling distribution with mean of μ =.5408 and standard deviation $\sigma = \sqrt{\frac{p(p-1)}{N}}$ =.059, and since the sample size is large enough to assume normality, then with a probability of 99.73%, the population mean will lie between the limits .364 and .718:



← The shaded area is 99.73% of the area under the curve.

If we lower the confidence interval to 90.00%, then the limits become .444 and .638:



← The shaded area is 90.00% of the area under the curve.

This means that given repeating sampling from the same population of sample size N=71, then we could expect that 99% proportion of times the faculty members either eat lunch off campus or do not eat lunch will be between about 36% and 72%. With 90% probability, we could expect the proportion of times the faculty members either eat lunch off campus or do not eat lunch to be between about 44% and 64%.

The statistical summary on page 5 shows that the respondants of the sample reported that they ate lunch in a House snack bar 20% of the time (during the 5-day period of reporting). With respect to this proportion of 20%, we can also obtain confidence intervals on our use of this proportion as an estimator of the

Figure 5.

Faculty members' reports of where they ate lunch over a one-week period, all Divisions.
N=71x5=355.

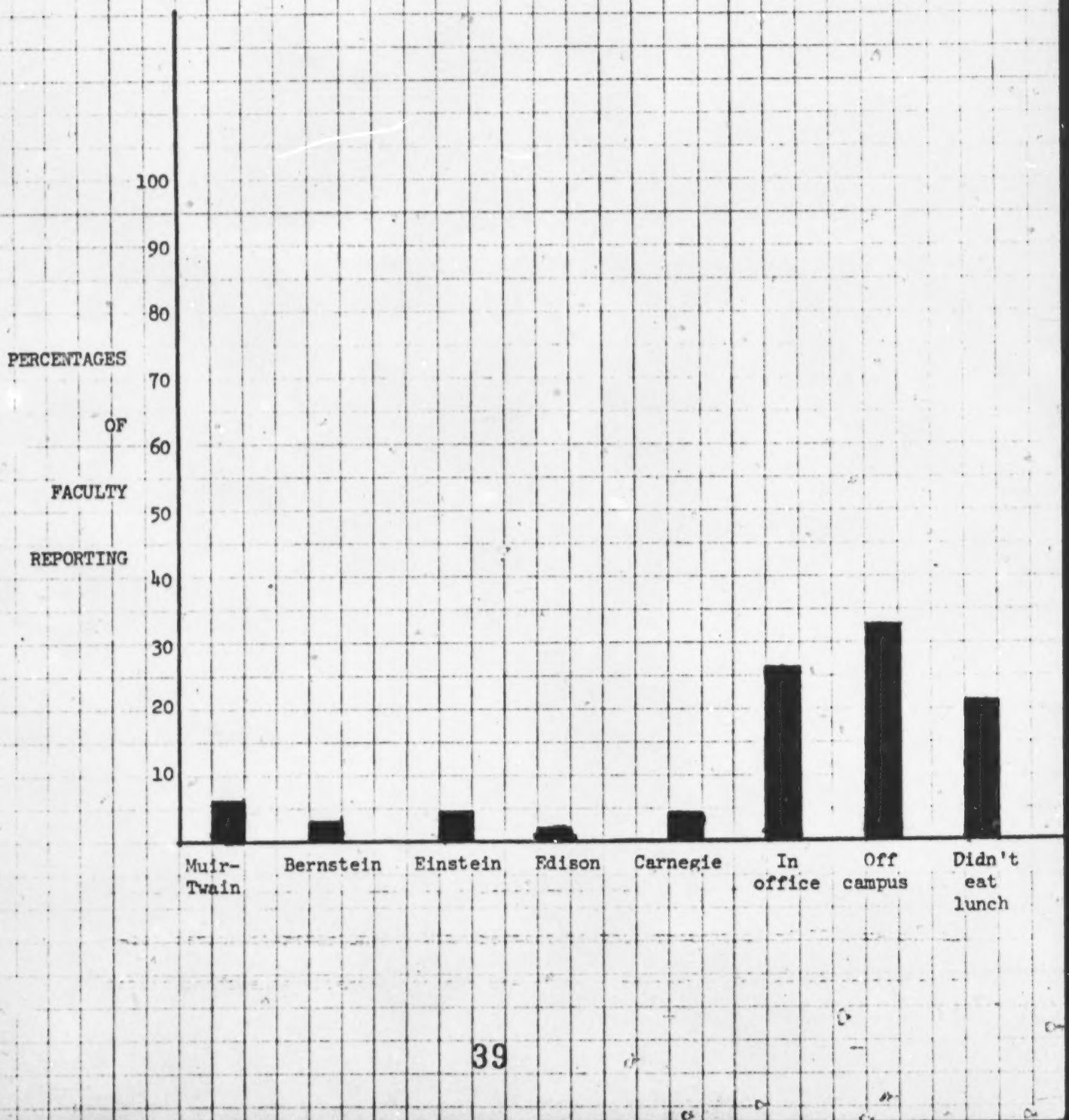
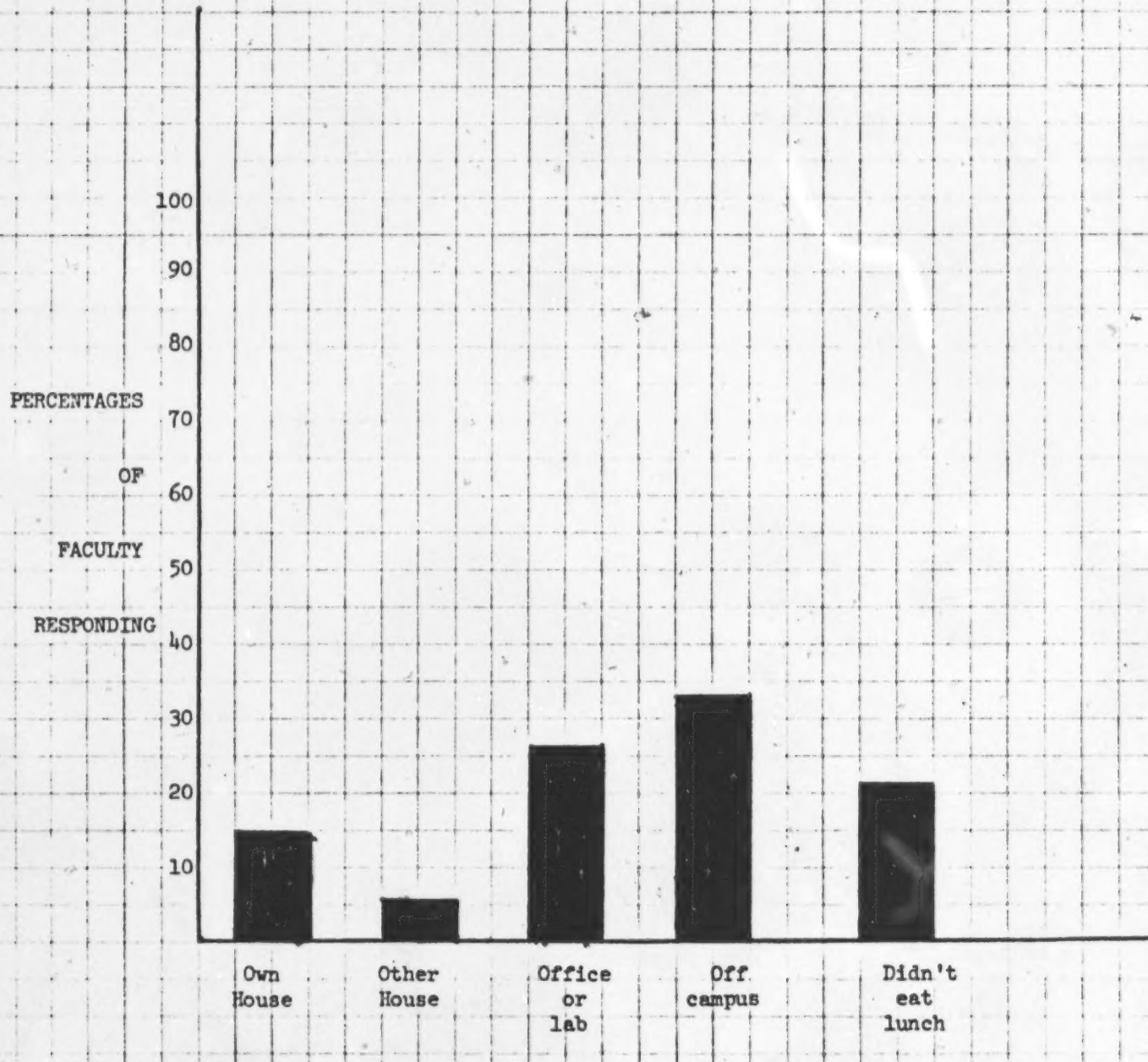
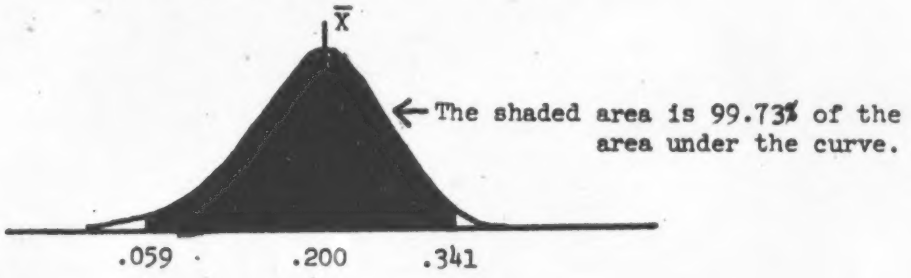


Figure 6.

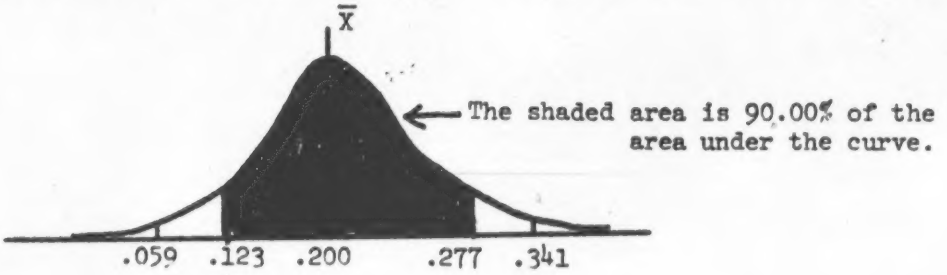
Faculty members reports of where they ate lunch over a one-week period, all Divisions.
N=71x5=355.



population mean. Again, because the sample size is large, then the sampling distribution approaches normality with mean of μ =.2000 and standard deviation $\sigma = \sqrt{\frac{p(p-1)}{N}}$ = .047. With a probability of 99.73%, the population mean will lie between the limits .059 and .341:



For a confidence level of 90%, the population mean will lie between .123 and .277:



What this means is that assuming that this was a typical week for faculty members and assuming the patterns don't change, then we can expect that given repeated sampling from the same population of size N=71, that with a probability of 99%, the faculty will use the House snack bars between about 6% and 34% of the time, and the rest of the time they will either eat in their offices, or off campus, or not eat lunch. With a probability of 90%, the faculty will use the House snack bars between about 12% and 28% of the time, and the rest of the time will either eat in their offices, off campus, or not eat lunch. This survey, however, was taken before the opening of the Culinary Arts Services, and there may or may not

therefore be significant changes in these patterns.

The following are the distributions broken down by Division:

Fine Arts (N=6 respondants x 5 days = 30)

Own House	7
Other House	2
Office or lab	6
Off campus	5
Didn't eat lunch	10

Business Education (N=10 respondants x 5 days = 50)

Own House	11
Other House	3
Office or lab	15
Off campus	16
Didn't eat lunch	5

Language Arts (N=15 respondants x 5 days = 75)

Own House	9
Other House	2
Office or lab	27
Off campus	28
Didn't eat lunch	9

Physical Education (N=6 respondants X 5 days = 30)

As of the date of this Report, Physical Education had no House.

Carnegie HOuse	4
Office or lab	7
Off campus	10
Didn't eat lunch	9

Social Sciences (N=17 respondnats x 5 days = 85)

Own House	7
Other House	2
Office or lab	24
Off campus	29
Didn't eat lunch	23

Science, Engineering, and Math (N=12 respondants x 5 days = 60)

Own House	12
Other House	1
Office or lab	12
Off campus	19
Didn't eat lunch	16

Vocational/Technical Education (N=5 respondants x 5 days = 25)

Own House	7
Other House	4
Office or lab	1
Off campus	10
Didn't eat lunch	3

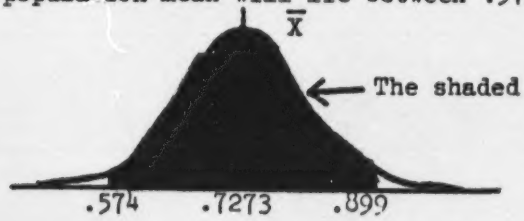
In summary, the respondants of the sample reported that they ate lunch in House snack bars only about 20% of the time, and when they did, they preferred their own House snack bar to others by a ratio of about 3 to 1. They also reported that a little over half the time they either did not eat lunch or they ate off campus.

7. Participation in meetings and other campus activities

Respondants of the sample were asked about their participation in campus meetings through the following question:

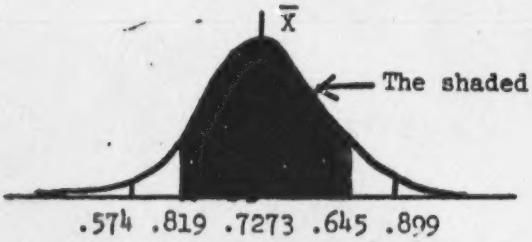
Last week I attended _____ number of meetings.

The distribution of responses is reported in the statistical summary on page 6, and is graphed in Figure 7 on page 36. Note that the distribution is modal at 2, and the mean of 1.67 is quite close to this mode. Note further that the slope drops sharply between 3 meetings per week and 4 meetings. Note further that 73.23% of the respondants reported that they attended between 1 and 3 meetings per week. That is, we can say about 3/4 of the faculty attend at least 1 meeting per week but not more than 3, and we can place confiience limits on this statement. Using the proportion of .7323 as an estimator of the mean of the sampling distribution (with standard deviation $\sigma = \sqrt{\frac{p(p-1)}{N}} = .053$), then 99.73% of the time, the actual population mean will lie between .574 and .899:



The shaded area is 99.73% of the area under the curve.

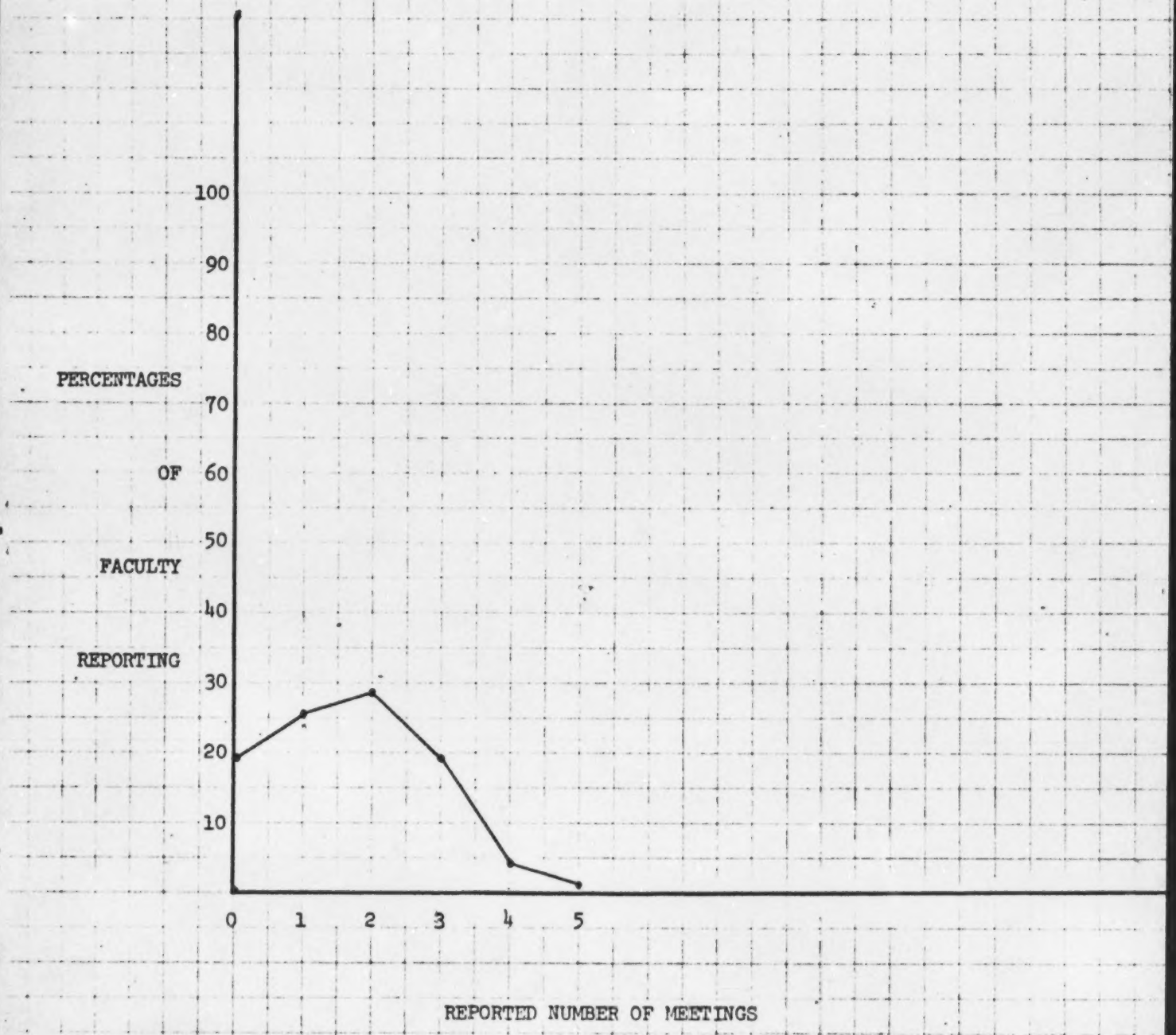
For a confidence level of 90.00%, the confidence limits become .645 and .819:



The shaded area is 90.00% of the area under the curve.

Figure 7.

Reported number of meetings attended over a one-week period.



This means that with a probability of about 99%, and given repeated sampling from the same population of sample size N=71, that we would find between about 57% and 90% of the faculty attend between 1 and 3 meetings per week. With a probability of 90%, we would find between about 64% and 82% of the faculty attending between 1 and 3 meetings per week. This of course assumes that the week for which the respondants of the sample were answering was "typical;" since the questionnaires were sent out in late April, which is neither near the beginning or the end of the semester and which is therefore not extraordinary in that sense, we may at least to be to assume that the time period for which the respondants of the sample were answering was not typical.

The following are the distributions for number of meetings attended over a one-week period broken down by Division:

Fine Arts

Number of meetings	Frequency of response
0	0
1	2
2	3
3	1

Arithmetic mean:

$\bar{X}=1.833$

Business Education

Number of meetings	Frequency of response
0	3
1	1
2	2
3	3
4	1

Arithmetic mean:

$\bar{X}=1.800$

Language Arts

Number of meetings	Frequency of response
0	5
1	3
2	4
3	2
4	1

Arithmetic mean:

$\bar{X}$=1.400

Physical Education

Number of meetings	Frequency of response
0	1
1	2
2	3

Arithmetic mean:

$\bar{X}$=1.333

Social Sciences

Number of meetings	Frequency of response
0	4
1	6
2	0
3	6

Arithmetic mean:

$\bar{X}$=1.500

Science, Engineering, and Math

Number of meetings	Frequency of response
0	1
1	1
2	7
3	1
4	1
5	1

Arithmetic mean:

$\bar{X}$=2.250

Vocational/Technical Education

Number of meetings	Frequency of response
0	0
1	3
2	1
3	1

Arithmetic mean:

$\bar{X}$=1.600

Note that with the exception of the Science, Engineering, and Math Division, which has a rather high mean, that most of the Division means are more or less clustered around the mean of the total sample, which was 1.67.

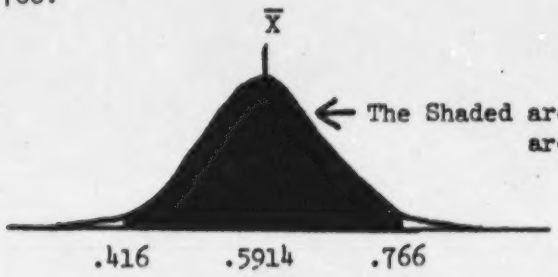
The distributions for both the total sample and the Division subsamples must be interpreted with caution for the following reason: not all committees to which faculty members belong meet on a weekly basis. The presence in both the total sample and the Division subsamples of respondants answering that they attended no meetings during the week should therefore not be interpreted to mean that either in the total sample or in the Division subsamples there are individuals who are not going to any meetings ever; all it means is that for this particular week for which respondants were asked to enter, their particular committee was not meeting. For the entire sample, however, we probably have a good cross-section for a given week, and we could probably expect that had the questionnaire been given during another week, call it Week #2, that we would come up with about the same distribution, since during Week #2, there would probably be other individuals in the sample whose committees were not meeting during that particular week.

Respondants of the sample were also asked to indicate the number of campus activities other than meetings which they attended within the same one-week

(i.e., five-day) period through the following question:

> Last week I participated in ____ number of other campus activities, such as House extra-curricular activities.

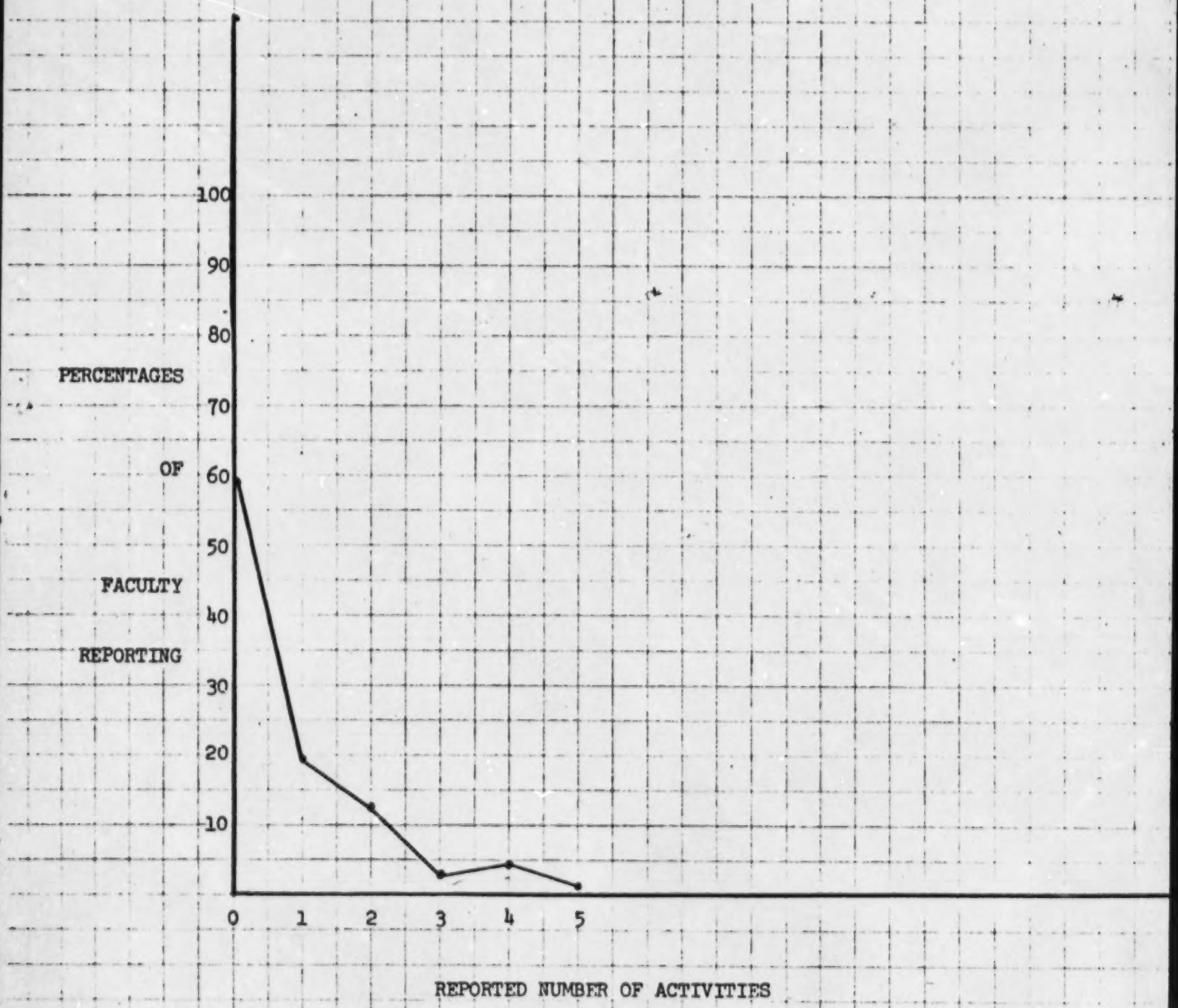
The distribution of responses is given in the statistical summary on page 6, and is graphed in Figure 8 on page 41. Note the relatively low mean of .775 compared to the mean of 1.67 for number of meetings attended. Note further that the distribution for number of other activities is modal at 0 and drops off sharply thereafter. Note further that almost 60% of the sample report attending no other activities, and we can obtain confidence levels for the use of this proportion as an estimator of the population mean. The mean of the sampling distribution with which we are dealing is μ =.5914 with a standard deviation of $\sigma = \sqrt{\frac{p(p-1)}{N}}$ =.058. Since this sampling distribution approaches normality as sample size increases, then with about 99% probability, we can expect the actual population mean to lie between .416 and .766:



With 90.00% probability, we can expect the actual population mean to lie between .496 and .687:

Figure 8.

Reported number of activities other than meetings attended over a one-week period.



In other words, given repeated sampling from the same population and using samples of N=71, then about 99% of the time we could expect that between about 42% and 77% of the faculty would report participating in no campus activities other than meetings over a one-week period. About 90% of the time, we could expect that between about 50% of the faculty and about 69% of the faculty would report participating in no campus activities other than meetings over a one-week period. This of course assumes that the particular week for which the respondants were answering was not extraordinary in some way; since it was in late April, when there is more or less a "normal" amount of extra-curricular activities happening on campus (as opposed to, say, either the first or last week of school when there are few campus activities), then it is probably safe to at least assume that this week was not extraordinary.

A comparison of the distributions and the sampling curves for the number of meetings attended (in the earlier section of this chapter) with these distributions and curves for the number of other campus activities participated in will demonstrate that faculty members participate in more meetings than they do in other activities such as House extra-curricular activities; however, this probably shouldn't be interpreted as necessarily being bad for the following reasons: (1) Extra-curricular activities are designed primarily for the students, and it may therefore be unreasonable to expect faculty members to be interested in these sorts of activites. (2) Since they are primarily for the students, it may also be unreasonable to expect students to share these activities with faculty or even particularly welcome them at these activities. As was pointed out in Research Report #2, there are indications that students do take steps to maintain the status differentiation between themselves and their teachers, and it might therefore even cause students some discomfort if large numbers of faculty started showing up at

all the students' campus functions. On the other hand, faculty's lack of participation in activities such as House extra-curricular activities may contribute to a certain lack of communication between the House and the Division.

8. Afterword

There does seem to be a degree of segregation by Division with respect to faculty-faculty associational patterns, but whether or not this segregation can be attributed solely to the House Plan is a question which cannot now be answered and which eventually could be answered through a proper control study. Faculty members tend to have more contacts with their fellow faculty members than with administratores, and this is probably expectable by virtue of the facts that (1) there are fewer administrators than faculty, and therefore, other things being equal, the sheer probability a faculty member's interacting with another faculty member are much higher than the probability of interacting with an administrator, and (2) faculty members have more in common with respect to function (i.e., teaching) with other faculty members than they do with administrators.

Faculty members seem to be fairly conscientious in fulfilling their committee obligations and attending meetings. They in general participate in few other campus activities, such as House extra-curricular activities, but as was pointed out, this may not necessarily be bad and may even have some positive functions from the student's point of view.

The reader is again reminded that these results do not include faculty in the Health Sciences Division.

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